

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A resist composition comprising a base polymer and a fluorochemical surfactant which functions to reduce the contact angle at the interface between the surface of the resist composition coated onto a substrate and water or an aqueous base developer as the amount of the fluorochemical surfactant increases: wherein said fluorochemical surfactant is of the following formula (1):



wherein R^1 is hydrogen, a hydroxyl group, a straight, branched or cyclic alkoxy group of 1 - 6 carbon atoms, or an alkylcarbonyloxy group whose alkyl moiety has 1 - 6 carbon atoms, R^2 is hydrogen or a straight, branched or cyclic alkyl group of 1 - 6 carbon atoms, a is a positive integer of 0 - 6, m is equal to 0 or 1, and n is a positive integer of 1 - 40, each of Rf and Rf^1 , which may be the same or different, is a straight, branched or cyclic fluoroalkyl group having 1 - 12 carbon atoms, in which all groups attached to its carbon atoms are fluorine atoms or some are fluorine atoms and the remainder are hydrogen atoms.

2. Cancelled

3. (Original) The resist composition of claim 1, which is of chemical amplification type and to be exposed to high-energy radiation having a wavelength of 500 nm or less, x-rays or electron beams.

4. (Withdrawn) A method for forming a resist pattern comprising the steps of:

- (i) coating a resist composition according to claim 3 onto a substrate,
- (ii) heat treating the coated film and then exposing it to high-energy radiation having a wavelength of 500 nm or less, x-rays or electron beams through a photo mask, and
- (iii) optionally heat treating the exposed film and developing it with a developer.

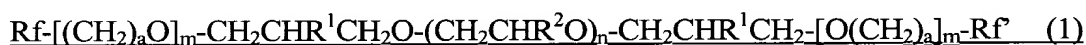
5. Cancelled

6. (Currently Amended) A chemically amplified positive working resist composition comprising:

a base resin of an alkali-insoluble or scarcely soluble resin having acidic functional groups protected with acid-labile groups wherein the resin becomes alkali soluble when the acid-labile groups are eliminated;

a photo-acid generator capable of generating acid upon exposure to deep UV, X-rays or electron beams; and

a fluorochemical surfactant functioning to reduce the contact angle at the interface between the surface of the resist composition coated onto a substrate and water or an aqueous base developer as the amount of the fluorochemical surfactant increases: wherein said fluorochemical surfactant is of the formula (1):



wherein R¹ is hydrogen, a hydroxyl group, a straight, branched or cyclic alkoxy group of 1 - 6 carbon atoms, or an alkylcarbonyloxy group whose alkyl moiety has 1 - 6 carbon atoms, R² is hydrogen or a straight, branched or cyclic alkyl group of 1 - 6 carbon atoms, a is a positive integer of 0 - 6, m is equal to 0 or 1, and n is a positive integer of 1 - 40, each of Rf and Rf', which may be the same or different, is a straight, branched or cyclic fluoroalkyl group having 1 - 12 carbon atoms, wherein all groups attached to its carbon atoms are fluorine atoms or some are fluorine atoms and the remainder are hydrogen atoms.

7. Cancelled

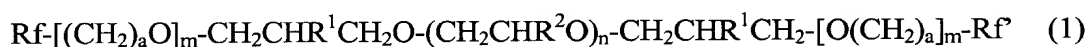
8. (Withdrawn) A chemically amplified negative working resist composition comprising:
an alkali-soluble resin;

a crosslinking agent having a group reactive with the alkali-soluble resin in an acidic condition;

a photo-acid generator capable of generating acid upon exposure to deep UV, X-rays or electron beams; and

a fluorochemical surfactant functioning to reduce the contact angle at the interface between the surface of the resist composition coated onto a substrate and water or an aqueous base developer as the amount of the fluorochemical surfactant increases.

9. (Withdrawn) The chemically amplified negative working resist composition of claim 8 wherein said fluorochemical surfactant is of the formula (1):



wherein R^1 is hydrogen, a hydroxyl group, a straight, branched or cyclic alkoxy group of 1 to 6 carbon atoms, or an alkylcarbonyloxy group whose alkyl moiety has 1 to 6 carbon atoms, R^2 is hydrogen or a straight, branched or cyclic alkyl group of 1 to 6 carbon atoms, a is a positive integer of 0 to 6, m is equal to 0 or 1, and n is a positive integer of 1 to 40, each of Rf and Rf' , which may be the same or different, is a straight, branched or cyclic fluoroalkyl group having 1 to 12 carbon atoms, wherein all groups attached to its carbon atoms are fluorine atoms or some are fluorine atoms and the remainder are hydrogen atoms.

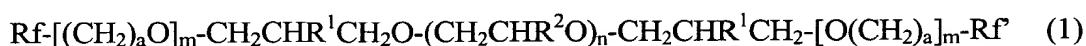
10. (Previously Presented) A resist composition for g-line or i-line comprising:
a novolak resin;

a naphthoquinonediazide compound; and

a fluorochemical surfactant functioning to reduce the contact angle at the interface between the surface of the resist composition coated onto a substrate and water or an aqueous base developer as the amount of the fluorochemical surfactant increases.

11. (Previously Presented) The resist composition of claim 10 wherein said fluorochemical

surfactant is of the formula (1):



wherein R^1 is hydrogen, a hydroxyl group, a straight, branched or cyclic alkoxy group of 1 to 6 carbon atoms, or an alkylcarbonyloxy group whose alkyl moiety has 1 to 6 carbon atoms, R^2 is hydrogen or a straight, branched or cyclic alkyl group of 1 to 6 carbon atoms, a is a positive integer of 0 to 6, m is equal to 0 or 1, and n is a positive integer of 1 to 40, each of Rf and Rf' , which may be the same or different, is a straight, branched or cyclic fluoroalkyl group having 1 to 12 carbon atoms, wherein all groups attached to its carbon atoms are fluorine atoms or some are fluorine atoms and the remainder are hydrogen atoms.

12. (Currently Amended) The resist composition of claim ~~2~~ 1 wherein R^1 is a hydroxyl, methoxy or acetoxy.

13. (Currently Amended) The resist composition of claim ~~2~~ 1 wherein R^2 is a hydrogen or methyl.

14. (Currently Amended) The resist composition of claim ~~2~~ 1 wherein a is a positive integer of 0 ~~to~~ 2.

15. (Currently Amended) The resist composition of claim ~~2~~ 1 wherein n is a positive integer of 2 ~~to~~ 8.

16. (Currently Amended) The resist composition of claim ~~2~~ 1 wherein Rf and Rf' are, independently, perfluorobutyl, perfluorohexyl, perfluorooctyl, perfluorodecyl, perfluoro-3-methylbutyl, perfluoro-5-methylhexyl, perfluoro-7-methyloctyl, perfluoro-9-methyldecyl, 2H-tetrafluoroethyl, 4H-octafluorobutyl, 6H-dodecafluorohexyl, or 8H-hexadecafluorooctyl.

17. (Previously Presented) The resist composition of claim 1 wherein the fluorochemical surfactant is blended in the resist composition in an amount of 10 to 2,000 parts by weight per million parts by weight of the composition.

18. (Previously Presented) The resist composition of claim 1 wherein the fluorochemical surfactant is blended in the resist composition in an amount of 50 to 700 parts by weight per million parts by weight of the composition.

19. (Previously Presented) The resist composition of claim 1 wherein the base polymer is polyhydroxystyrene, poly[(t-butyl acrylate)-(hydroxystyrene)] copolymer, poly[(t-butyl methacrylate)-(methyl methacrylate)-(polymethacrylic acid)] copolymer, or poly[(t-butyl-5-norbornene-2-carboxylate)-(maleic anhydride)-(5-norbornene-2,3-dicarboxylic anhydride)] copolymer.

Please add the following new claim:

--20. (New) The resist composition of claim 10 wherein said fluorochemical surfactant is of the following formula (1):



wherein R^1 is hydrogen, a hydroxyl group, a straight, branched or cyclic alkoxy group of 1 - 6 carbon atoms, or an alkylcarbonyloxy group whose alkyl moiety has 1 - 6 carbon atoms, R^2 is hydrogen or a straight, branched or cyclic alkyl group of 1 - 6 carbon atoms, a is a positive integer of 0 - 6, m is equal to 0 or 1, and n is a positive integer of 1 - 40, each of R_f and R_f^1 , which may be the same or different, is a straight, branched or cyclic fluoroalkyl group having 1 - 12 carbon atoms, in which all groups attached to its carbon atoms are fluorine atoms or some are fluorine atoms and the remainder are hydrogen atoms.--